

What is claimed is:

1. A method for determining an amount of coal tar that can enter a given type of soil at a range of soil depths at a field site, comprising:

    placing a soil sample free of coal tar from a site in a pressurizable chamber;

    filling the pressurizable chamber with water, thereby displacing gas from the pressurizable chamber;

    feeding coal tar at a first predetermined pressure to the pressurizable chamber, thereby pressurizing the soil sample to the first predetermined pressure and displacing a portion of the water with the coal tar to create an amount of displaced water;

    measuring the amount of the displaced water to determine an amount of coal tar that entered the soil sample;

    repeating said feeding and said measuring at a plurality of additional predetermined pressures to provide a plurality of pressures and corresponding amounts of coal tar that entered the soil sample; and

    correlating each of said pressures to a depth of soil at a field site to determine an amount of coal tar that can enter the soil at a range of soil depths at the field site.

2. The method of claim 1, further comprising determining an amount of coal tar that can be displaced from the soil sample at a range of soil depths at the field site, wherein said determining comprises:

    feeding water at a first predetermined water pressure to the pressurizable chamber, thereby pressurizing the soil sample to the first predetermined water pressure and displacing a portion of the coal tar from the sample to product an amount of displaced coal tar;

    measuring the amount of displaced coal tar;

    repeating said feeding water and said measuring the amount of displace coal tar at a plurality of additional predetermined water pressures, thereby generating a plurality of water pressures and corresponding amounts of displaced coal tar; and

    correlating each of said water pressures to a depth of soil at the field site to determine an amount of coal tar that can be displaced from the soil sample at a range of soil depths at the field site.

3. A method for determining an amount of coal tar that can be displaced from a soil sample at a range of soil depths at a field site, comprising:

placing a soil sample comprising a known amount of coal tar in a pressurizable chamber;

removing gas from the soil sample;

feeding water at a first predetermined water pressure to the pressurizable chamber, thereby pressurizing the soil sample to the first predetermined water pressure and displacing a portion of the coal tar from the sample to produce an amount of displaced coal tar;

measuring the amount of displaced coal tar;

repeating said feeding water and said measuring the amount of displaced coal tar at a plurality of additional predetermined water pressures, thereby generating a plurality of water pressures and corresponding amounts of displaced coal tar; and

correlating each of said water pressures to a depth of soil at the field site to determine an amount of coal tar that can be displaced from the soil sample at a range of soil depths at the field site.

4. A apparatus, adaptable for positioning in the laboratory or the field, for determining an amount of coal tar that can enter, and subsequently be displaced from, a given type of soil for a range of depths of the soil, comprising:

a pressurizable chamber configured to hold a soil sample;

at least two reservoirs fluidly connected to said pressurizable chamber and configured to feed a pressurized fluid to said pressurizable chamber; and

a source of controlled pressure fluidly connected to each of said at least two reservoirs.

5. The apparatus of claim 4, further comprising:

a container fluidly connected to said chamber for collecting leachate from the soil sample in said chamber;

a hydrophilic filter fluidly connected to said container.